WHAT IS CLAIMED:

1. A composition comprising platelet rich plasma and purified poly-β-1→4-N-acetylglucosamine polymer, wherein the platelet rich plasma is derived from preserved platelets.

2. The composition of claim 1, wherein the poly-β-1→4-N-acetylglucosamine polymer is comprised of poly β-1→4-N-acetylglucosamine polymer fiber slurry.

3. The composition of claim 2, wherein the composition is 50% platelet rich plasma and 50% poly β-1→4-N-acetylglucosamine fiber slurry.

4. The composition of claim 2, wherein the poly β-1→4-N-acetylglucosamine fiber slurry comprises 1mg of poly β-1→4-N-acetylglucosamine fiber per 5ml of distilled water.

5. The composition of claim 2, wherein the composition is equal parts platelet rich plasma and poly β-1→4-N-acetylglucosamine fiber slurry and at least 0.125% $CaCl_2$ solution.

6. The composition of claim 5, wherein the $CaCl_2$ solution is 10% $CaCl_2$ solution.

7. The composition of claim 3, 4, or 6, further comprising at least 0.125% magnesium.

8. A composition comprising platelet rich plasma and 1 mg of poly-β-1→4-N-acetylglucosamine fiber per 1.0 ml of 0.9% NaCl, wherein the platelet rich plasma is derived from preserved platelets.

9. A composition comprising platelet rich plasma and 2 mg of poly-β-1→4-N-acetylglucosamine fiber per 1.0 ml of 0.9% NaCl, wherein the platelet rich plasma is derived from preserved platelets.

10. The composition of claim 2-6, 8 or 9, wherein the composition is a pharmaceutical composition.

11. The composition of claim 2-6, 8 or 9, wherein the composition is a gel.

12. A method for preserving platelets isolated from a mammal for later therapeutic use, the method comprising contacting said platelets with poly-β-1→4-N-acetylglucosamine polymers, such that a gel is formed, and freezing the gel for later therapeutic use.

13. A method of aggregating platelets isolated from a mammal, the method comprising contacting poly-β-1→4-N-acetylglucosamine polymers to the platelets, aggregating the platelets.

14. A method of activating platelets isolated from a mammal, the method comprising contacting poly-β-1→4-N-acetylglucosamine polymers to the platelets, thereby activating the platelets.

15. A method for accelerating wound healing in a patient in need thereof comprising administering to a wound a composition comprising platelet rich plasma and poly-β-1→4-N-acetylglucosamine polymer fiber, wherein the platelet rich plasma is derived from stored platelets, such that wound healing is accelerated in the patient.

16. A method for reducing hemostasis time in a patient in need thereof comprising administering to a wound a composition comprising platelet rich plasma and poly-β-1→4-N-acetylglucosamine polymer fiber, wherein the platelet rich plasma is derived from stored platelets, such that hemostasis time is reduced in the patient.

17. The method of claim 15 or 16, wherein the stored platelets are derived from the patient.

18. A method for producing a platelet-poly-β-1→4-N-acetylglucosamine polymer fiber gel comprising, mixing a population of isolated platelets with poly-β-1→4-N-acetylglucosamine polymer fiber solution in the presence of a 10% calcium chloride

solution, such that the platelets bind poly-β-1$\rightarrow$4-N-acetylglucosamine polymer fibers in greater numbers in comparison to a mixture comprising equivalent amounts of chitosan fibers and platelets.

19. A method for producing a platelet-fiber gel, comprising: mixing (i) a population of isolated platelets with (ii) a fiber to which platelets bind in greater numbers than to chitosan, said mixing being performed in solution, such that the platelets bind to the fiber, thereby forming a platelet-fiber gel.

20. The method of claim 19, wherein the mixing is performed in the presence of a 10% calcium chloride solution.

21. The method of claim 19, wherein at least 25%, 50%, 100%, 200% or 500% more platelets bind to the fiber than to chitosan having approximately the same surface area as the fiber.